

## ABSTRACT

The present invention provides a composition and method of regulating the activity of regulatory T cells. The present invention relates to a composition containing an antigen recognized by CD4<sup>+</sup>CD25<sup>+</sup>regulatory T cells or an expression vector encoding such an antigen and a method of controlling an immune response from a mammal by administrating the composition to the mammal. Furthermore, the present invention provides effective means for suppressing a rejection reaction and a graft-versus-host reaction in transplantation and for prevention and treatment of an autoimmune disease or an allergic disease. Furthermore, an immunosuppression condition can be removed by the administration of Interferon- $\gamma$  or a combination of Interleukin 12 and Interleukin 18. In other words, those cytokine actions and the sensitization with an SEREX antigen are suitably combined to artificially manipulate regulatory T cells, allowing the cells to be applied to an autoimmune disease, reactions accompanied with organ transplantation, allergic reaction, control of tumor immunity, and the like.